REMARKS

Claims 1-15 are currently pending in this application.

35 U.S.C. § 102(e) Rejection – U.S. Patent No. 6,828,766

Claims 1-13 have been rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,828,766 (Corva et al.). Applicants respectfully traverse this rejection for the reasons set forth in detail below.

Independent claim 1 of the present invention recites "a power supply having a first operation mode and a second operation mode, comprising: a main circuit having at least one output port ...; a first control circuit ...; a second control circuit ...; and a switching controller processing a control signal to control said first control circuit and said second control circuit to one of said first operation mode and said second operation mode in response to a load status of said output port."

Corva does not teach or suggest a switching controller processing a control signal to control the first control circuit and the second control circuit in response to a load status of the output port, as recited in claim 1 of the present invention. Corva discloses a power supply circuit including a switching controller (a control logic as shown in Fig. 4) for controlling a first control circuit (a current comparator as shown in Fig. 4) and a second control circuit (an oscillator as shown in Fig. 4) in response to the output signals of a zero-crossing comparator, a sleep comparator, the first control circuit (the current comparator), and the second control circuit (the

oscillator), respectively. In Corva, the first control circuit (the current comparator) is controlled by the output signals from the current sensing device at the output port, the error amplifier, and the slope generator, respectively, and the second control circuit (the oscillator) is controlled by the output signal from the sleep comparator (as shown in Fig. 4).

Claim 1 of the present invention is distinguishable from Corva because the switching controller of the present invention is employed to control the first control circuit and the second control circuit to one of the first operation mode and the second operation mode <u>in response to a load status of the output port</u> (sensed through a current sensor 18 as shown in Fig. 2 of the present invention). Corva discloses that a switching controller (control logic) is provided to control the first control circuit (the current comparator) and the second control circuit (the oscillator) <u>in response to the output signals of the zero-crossing comparator, the sleep comparator, the first control circuit (the current comparator), and the second control circuit (the oscillator) respectively.</u>

For the reasons set forth above, the configuration and operational principles of the power supply of claim 1 of the present invention are distinguishable from Corva.

Furthermore, the advantages of the power supply of the presently claimed invention are not disclosed or suggested by Corva. The switching controller recited

in claim 1 of the present invention is employed to control the first control circuit and the second control circuit to one of the first operation mode and the second operation mode in response to the load status, which is sensed through a current sensor (element (18) as shown in Fig. 2 of the present invention), which results in a low standby loss for power converters. *See* paragraphs [0008] and [0010] of the specification of the present invention. The power supply of Corva does not disclose this technical advantage. In Corva, the controller (the control logic) is provided to control the first controller (the current comparator) through the following: first, through two switches, HS and LS; second, through the inductance and the Zener diode; and third, through the current sensing device and the error amplifier (see Fig. 4). The controller (the control logic) is also provided to control the second controller (the oscillator) through the following: first, through two switches, HS and LS; second, through the inductance and the Zener diode, and third, through the sleep comparator (*see* Fig. 4). Since Corva requires extra components or elements such as two switches, the inductance and the diode for controlling the first and the second controllers, the configuration and operational principles of the present invention are relatively simpler than those of Corva. Thus, the configuration and manufacturing costs of the present invention are either relatively simpler or lower than Corva.

Applicants respectfully request withdraw of the § 102(e) rejection of claim 1 over Corva. Similarly, claims 2-8, which are dependent from claim 1, are patentable over Corva.

Independent claim 9 of the present invention recites "a control method for a power supply having a first operation mode and a second operation mode, comprising steps of: providing a main circuit having at least one output port ...; providing a first control circuit ...; providing a second control circuit ...; and <u>processing a control signal to control said first control circuit and said second control circuit</u> under one of said first operation mode and said second operation mode <u>in response to a load status of said output port</u>." Applicants respectfully submit that claim 9 is distinguishable from Corva for the same reasons set forth above with respect to claim 1 of the present invention.

Applicants respectfully request withdraw of the § 102(e) rejection of claim 9 over Corva. Similarly, claims 10-13, which are dependent from claim 9, are patentable over Corva.

<u>35 U.S.C. § 102(b) Rejection – U.S. Patent No. 6,724,174</u>

Claim 14 has been rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,724,174 (Esteves et al.). Applicants respectfully traverse this rejection for the reasons set forth in detail below.

Independent claim 14 of the present invention recites "a power supply having a first operation mode and a second operation mode, comprising: a main circuit having at least one output port ...; a voltage control oscillator ...; a driver ...; a controller processing a control signal to control said voltage control oscillator so as to operate said main circuit under one of said first operation mode and said second operation mode in response to a load status of said output port; and a standby circuit for enabling said driver to control said main circuit in burst mode control when said power supply operates under said second operation mode, wherein when an output voltage of said power supply decreases to a low threshold value, said standby circuit enables said driver and said output voltage increases, and when said output voltage increases to a high threshold value, said standby circuit stops the operation of said driver and said output voltage decreases."

Esteves does not teach or suggest providing <u>a controller to operate the main circuit in response to a load status of the output port and a standby circuit provided to enable/stop the operation of the driver according to the output voltage of the power supply</u>, as recited in claim 14 of the present invention. Esteves discloses: (1) a controller (the logic 212 as shown in Fig. 2) provided to receive the output signal of a standby circuit (the burst comparator 219 as shown in Fig. 2); (2) the standby circuit (the burst comparator 219) receives the output signals of an error amplifier (217 as shown in Fig. 2) and a threshold voltage input; and (3) the error amplifier

(217) receives inputs from a reference voltage V_{REF} and a feedback voltage of the output voltage V_{OUT} (*see* Fig. 2).

In claim 14 of the present invention, the controller is provided to operate the main circuit in response to the load status of the output port (sensed through a current sensor 316 as shown in Fig. 5), and the standby circuit is employed to enable/stop the operation of the driver (315, as shown in Fig. 5) according to the output voltage Vo of the power supply. Esteves is distinguishable because it discloses that the controller (logic 212) is provided to operate the main circuit in response to the F_{CONT} signal of the mode selection circuitry 260. Esteves is further distinguishable because the standby circuit (219) is employed to enable/stop the operation of the driver (213 and 214) according to the output signal of the error amplifier 217 (as shown in Fig. 2 of Esteeves).

For the reasons set forth above, the configuration and operational principles of the power supply of claim 14 of the present invention are distinguishable from Esteves.

Furthermore, the advantages of the power supply of the presently claimed invention are not disclosed or suggested by Esteves. The controller recited in claim 14 of the present invention is provided to operate the main circuit in response to the load status, which is sensed through a current sensor (element (316) as shown in Fig. 5 of the present invention), and the standby circuit is provided to enable/stop

the operation of the driver (element (315) as shown in Fig. 5) according to the output voltage Vo of the power supply, which results in a low standby loss for power converters. *See* paragraphs [0008] and [0010] of the present invention. In Esteves, the controller (logic 212) is provided to operate the main circuit through receiving the F_{CONT} signal of the mode selection circuitry (260 as shown in Fig. 2), and the standby circuit (burst comparator 219) is employed to enable/stop the operation of the driver (213 and 214) through receiving the output signal of the error amplifier 217. Because Esteves requires extra components or elements such as the voltage divider 232, the error amplifier 217, the driver 242, and the mode selection circuitry 260 for controlling the controller, the configuration and operational principles of the present invention are relatively simpler than those of Esteves. Thus, the configuration and the manufacturing costs of the present invention are either relatively simpler or lower than those of Esteves.

Applicants respectfully request withdraw of the § 102(b) rejection of claim 14 over Esteves.

<u>35 U.S.C. § 102(b) Rejection – U.S. Patent No. 5,773,966</u>

Claim 15 has been rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,773,966 (Steigerwald). Applicants respectfully traverse this rejection for the reasons set forth in detail below.

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Independent claim 15 of the present invention recites "a power supply having a first operation mode and a second operation mode, comprising: a main circuit having at least one output port ...; a pulse width modulator ...; a driver ...; a controller processing a control signal to control said pulse width modulator so as to operate said main circuit under one of said first operation mode and said second operation mode in response to a load status of said output port; and a standby circuit for enabling said pulse width modulator to control said main circuit in burst mode control when said power supply operates under said second operation mode, wherein when an output voltage of said power supply decreases to a low threshold value, said standby circuit enables said driver and said output voltage increases, and when said output voltage increases to a high threshold value, said standby circuit stops the operation of said driver and said output voltage decreases."

Steigerwald does not teach or suggest providing <u>a controller to operate the main circuit in response to a load status of the output port and a standby circuit provided to enable/stop the operation of the driver according to the output voltage of the power supply</u>, as recited in claim 15 of the present invention. Steigerwald discloses a controller (the Gate Drive Logic 16 as shown in Fig. 4) provided to operate the main circuit in response to the output signal of the PWM (the PWM Modulator 12 as shown in Fig. 4), and a standby circuit (the Function Generator 20 + the comparator 22 described in column 3, lines 10-50, and Fig. 4) provided to

enable/stop the operation of the driver (18) by receiving a load current (isense) provided by a current sensor (24) and a battery voltage (Vbattery) provided by a voltage sensor 26 (*see* Fig. 4).

In claim 15 of the present invention, the controller is provided to operate the main circuit in response to the load status of the output port (sensed through a current sensor 316 as shown in Fig. 5 of the present invention), and the standby circuit is employed to enable/stop the operation of the driver (315 as shown in Fig. 5 of the present invention) according to the output voltage Vo of the power supply. Steigerwald is distinguishable because the controller (Gate Drive Logic 16) is provided to operate the main circuit in response to the output signal of the PWM Modulator 12. Steigerwald is further distinguishable because the standby circuit (20 + 22) is employed to enable/stop the operation of the driver (18) according to the load current isense and the battery voltage Vbattery.

For the reasons set forth above, the configuration and operational principles of the power supply of claim 15 of the present invention are distinguishable from Steigerwald.

Furthermore, the advantages of the power supply of the presently claimed invention are not disclosed or suggested by Steingerwald. The controller recited in claims 15 of the present invention is provided to operate the main circuit in response to the load status, which is sensed through a current sensor (element (316)

as shown in Fig. 5 of the present invention), and the standby circuit is employed to enable/stop the operation of the driver (element (315), as shown in Fig. 5) according to the output voltage Vo of the power supply, which results in a low standby loss for power converters. *See* paragraphs [0008] and [0010] of the present invention. In Steigerwald, the controller (Gate Drive Logic 16) is provided to operate the main circuit through receiving the output signal of the PWM Modulator 12 (as shown in Fig. 4), and the standby circuit (20 + 22 as shown in Fig. 4) is employed to enable/stop the operation of the driver (18) according to the load current (isense) and the battery voltage (Vbattery). Because Steigerwald requires extra components or elements such as the battery, which provides the battery voltage Vbattery, the voltage sensor 24, and the voltage divider (R9 + R10) for controlling the controller, the configuration and operational principles of the present invention are relatively simpler than those of Steigerwald Thus the configuration and the manufacturing costs of the present invention are either relatively simpler or lower than those of the Steigerwald.

Applicants respectfully request withdraw of the § 102 (b) rejection of claim 15 over Steigerwald.

Conclusion

In view of the foregoing remarks, Applicants respectfully submit that the present application, including claims 1-15, is in condition for allowance and a notice to that effect is respectfully requested.

If the Examiner believes that any additional minor formal matters need to be addressed in order to place this application in condition for allowance, or that a telephone interview will help to materially advance the prosecution of this application, the Examiner is invited to contact the undersigned by telephone at the Examiner's convenience.

Respectfully submitted,

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